TABLE I.—*Mean monthly data from January 1872, to December 1886.*

Year.	Sun spots.												Magnetic declination.												Range of air pressure (inches).											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov	Dec.
1872	40	60	44	50	54	55	52	42	57	52	56	42	10.5	9.5	10.1	10.9	10.7	11.0	11.0	12.0	10.9	8.9	10.1	9.5	.92	1.02	1.07	.89	.74	.56	.42	.39	.61	.58	.90	.92
1873	43	54	50	38	23	22	33	34	23	23	39	25	10.1	9.1	9.9	10.3	8.4	8.6	8.7	8.6	8.2	7.8	8.2	8.4	1.05	1.04	1.12	.74	.72	.55	.43	.42	.60	.77	1.08	.99
1874	30	32	23	16	21	19	35	32	13	18	14	16	9.3	8.9	8.0	7.8	8.2	7.3	7.9	7.5	8.2	6.9	7.0	6.6	1.16	1.08	1.04	.83	.64	.50	.47	.45	.45	.77	1.16	.91
1875	7	11	17	16	6	12	8	8	1	7	9	5	5.9	6.1	5.6	5.5	6.2	5.7	5.7	6.7	7.1	6.1	6.4	7.0	.91	1.18	1.00	.69	.87	.53	.45	.53	.70	.75	.99	.77
1876	7	8	17	2	3	2	9	4	6	7	5	4	7.1	6.0	5.2	5.4	5.0	7.1	7.4	6.5	6.0	7.0	6.3	6.8	1.03	1 06	1.12	.78	.60	.51	.43	.39	.55	.92	.85	.94
1877	13	4	8	9	11	2	1	2	5	2	6	2	6.8	5.8	5.3	4.3	5.2	5.7	6.0	5.9	5.4	5.7	6.1	6.6	.99	.96	1.00	1.04	.57	.47	.45	.43	.51	.64	.73	.98
1878	2	6	6	1	4	4	0	1	0	0	0	0	5.7	5.7	4.7	4.9	4.8	6.3	5.6	5.4	4.5	5.1	5.5	6.8	.97	1.08	.81	.78	.55	.52	.46	.34	.57	.77	.73	.91
1879	0	0	0	2	1	2	1	4	1	5	5	1	6.5	5.8	5.5	4.3	5.7	6.7	6.3	6.5	5.6	5.8	6.5	6.9	.88	.88	.86	.78	.66	.64	.41	.59	.68	.82	.83	.86
1880	12	6	2	3	12	15	12	23	33	21	16	11	6.8	6.3	6.0	6.3	6.4	7.1	7.4	7.3	7.6	7.9	7.8	7.4	.94	1.18	.97	.92	.71	.60	.30	.51	.62	.87	1.08	1.14
1881	18	20	32	36	20	34	34	36	26	22	20	21	7.6	8.2	7.2	6.7	7.5	9.4	8.5	8.6	9.2	8.4	7.7	8.6	1.04	.99	.81	.72	.54	.45	.40	.40	.61	.76	.88	.82
1882	17	32	26	57	40	29	27	16	27	27	28	12	7.8	8.3	7.8	7.5	9.6	7.2	6.8	7.6	8.1	9.3	8.9	8.2	1.00	1.04	1.01	.82	.68	.63	.44	.44	.52	.60	.81	1.29
1883	12	20	15	36	7	32	49	22	27	36	33	38	7.9	8.4	8.2	7.7	7.8	9.1	9.4	8.0	8.5	9.5	8.8	8.0	.99	1.03	1.04	.95	.70	.53	.55	.44	.51	.83	1.03	.90
1884	56	35	48	61	45	24	31	32	39	28	16	25	8.0	8.6	8.2	8.8	8.5	9.9	7.8	7.0	8.3	8.5	7.5	8.2	1.03	.95	.93	.85	.58	.50	.41	.50	.55	.60	.92	1.05
1885	26	51	42	46	73	100	62	43	36	40	27	15	8.2	6.5	6.2	5.9	7.8	9.8	9.0	8.1	7.3	7.9	7.9	7.2	1.19	.98	.81	.72	.62	.52	.40	.51	.57	.66	.75	1.17
1886	38	14	58	32	41	28	28	14	25	7	0	[0]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.02	1.08	.97	.76	.60	.52	.57	.51	.53	.94	1.00	.99
Cor.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	—.24	—.26	—.20	—.05	+.12	+.24	+.33	+.31	+.20	+.02	—.21	—.21

Year.	Mean temperature (degrees).												Clouds (tenths).												Precipitation (inches).											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1872	33	38	42	59	68	76	79	78	71	58	42	31	5.3	5.3	5.4	5.0	5.0	4.3	4.8	4.3	4.5	3.6	5.9	6.3	13.00	18.12	30.10	33.83	41.67	27.25	28.84	18.33	23.30	10.99	17.10	24.92
1873	30	38	46	55	66	77	78	78	68	56	45	40	5.5	5.1	4.6	5.1	5.7	5.3	4.9	4.2	5.8	3.7	5.2	5.9	29.21	25.88	18.80	27.18	54.63	38.23	22.69	24.17	19.02	22.64	18.88	20.59
1874	38	39	47	51	70	77	80	79	70	59	47	40	5.9	6.1	5.6	5.4	4.1	4.4	4.0	4.2	4.9	3.8	5.7	5.9	20.91	24.05	38.66	60.62	11.36	36.51	32.06	24.55	34.19	8.22	22.03	17.51
1875	29	33	44	54	67	74	79	73	67	55	46	45	5.9	5.6	6.0	4.7	4.4	5.0	5.3	4.6	4.8	4.2	5.9	5.4	26.91	31.77	47.83	26.71	22.09	40.18	42.38	26.30	24.99	14.41	31.23	26.57
1876	42	42	43	58	68	74	79	77	68	59	44	28	5.0	4.8	5.9	5.0	5.2	4.8	4.7	4.7	4.7	3.6	6.0	4.8	39.89	24.20	56.08	28.35	40.65	29.96	28.62	32.49	22.10	13.01	14.04	18.97
1877	34	44	44	57	67	75	79	77	70	60	45	48	5.6	5.2	5.5	5.6	4.7	5.1	4.4	3.6	4.9	5.3	5.5	5.4	18.35	6.99	26.52	39.50	17.47	51.17	28.03	20.01	33.98	34.45	33.87	23.89
1878	38	44	56	62	67	74	81	79	69	59	49	33	5.2	5.4	4.1	5.0	5.2	5.0	3.7	3.7	3.6	4.2	4.0	5.8	20.34	16.46	22.88	38.24	32.85	36.58	25.37	28.10	17.74	23.80	22.41	28.16
1879	34	37	51	58	67	75	80	75	67	64	50	39	4.8	5.1	4.1	3.8	4.2	4.3	4.2	4.4	3.6	3.9	4.7	6.3	21.58	16.73	12.98	26.71	32.86	27.94	31.61	35.89	14.63	12.09	29.42	30.82
1880	48	44	48	59	71	75	77	77	67	57	38	33	5.1	4.9	5.6	4.7	4.1	4.6	4.1	4.5	4.8	4.8	6.2	6.2	22.07	29.01	38.72	32.52	32.16	35.89	34.82	26.97	34.72	25.00	39.39	21.02
1881	29	36	44	55	72	77	81	81	73	63	47	45	6.1	5.9	4.8	5.2	4.4	4.1	3.5	3.6	3.2	5.6	5.2	5.2	28.63	35.33	17.18	19.48	22.47	22.97	16.13	14.51	35.84	38.99	33.72	19.53
1882	40	48	51	60	64	75	75	69	64	59	37	37	6.6	5.3	5 2	5.0	5.7	5.0	5.3	5.0	3.8	4.5	5.7	5.8	41.96	43.16	31.29	26.31	46.97	26.24	37.50	27.78	11.91	20.72	25.30	18.12
1883	31	38	44	59	64	74	78	75	68	60	50	42	5.8	5.7	5.1	5.3	5.0	5.1	4.3	3.5	3.5	5.6	4.6	5.3	28.59	35.64	17.80	43.05	28.44	42.50	28.97	15.14	5.45	36.63	35.11	25.29
1884	29	41	48	57	67	74	78	75	74	63	48	37	5.3	6.0	5.9	6.0	5.0	5.2	4.6	3.7	4.0	3.6	3.8	6.9	22.55	31.79	33.42	30.12	35.68	33.11	29.89	14.98	32.86	23.48	14.54	51.50
1885	30	32	43	59	66	75	78	75	69	56	48	39	4.4	4.6	4.9	5.7	4.9	4.9	4.5	4.3	5.1	4.2	5.0	4.7	33.15	11.95	14.28	27.60	23.64	25.84	28.48	28.72	48.70	16.79	16.19	17.79
1886	26	37	45	58	68	73	77	77	71	61	45	32	6.1	4.7	6.0	5.3	4.0	5.0	3.4	3.9	4.7	2.8	4.9	5.0	30.83	19.38	27.53	32.72	22.07	43.07	14.88	21.53	33.66	6.94	29.72	13.73
Cor.	+23	+18	+11	0	—12	—18	—21	—20	—12	—2	+11	+20	—.6	—.5	—.3	—.2	+.1	+.1	+.5	+.7	+.5	+.5	—.3	—.8	+.81	+2.64	—1.60	—5.52	—4.99	—7.16	—1.34	+3.38	+1.80	+6.80	+1.81	+3.38

TABLE II.—*Means of five consecutive months.*

Year.	Sun spots.												Magnotic declination.												Range of air pressure (inches)											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1872	.....	.....	50	53	51	51	52	52	52	50	50	49	10.0	10.1	10.3	10.4	10.7	11.1	11.1	10.8	10.6	10.3	9.9	9.5	.....	.....	.80	.83	.82	.79	.78	.73	.71	.70	.72	.72
1873	49	45	42	37	33	30	27	27	30	29	28	30	9.7	9.8	9.6	9.3	9.2	8.9	8.5	8.4	8.3	8.2	8.4	8.5	.78	.78	.81	.80	.80	.76	.78	.77	.79	.79	.83	.84
1874	30	25	24	22	23	25	24	23	22	19	14	13	8.6	8.5	8.4	8.0	7.8	7.7	7.8	7.6	7.5	7.2	6.9	6.5	.85	.83	.82	.79	.78	.77	.74	.79	.79	.77	.75	.81
1875	13	13	11	13	12	10	7	7	7	6	6	7	6.2	5.9	5.9	5.8	5.7	6.0	6.3	6.3	6.4	6.7	6.7	6.5	.81	.75	.80	.82	.80	.80	.86	.81	.81	.77	.76	.74
1876	9	8	7	6	7	4	5	6	6	5	7	7	6.3	6.1	5.7	5.7	6.0	6.3	6.4	6.8	6.6	6.5	6.6	6.5	.77	.76	.79	.78	.78	.73	.74	.78	.76	.75	.76	.75
1877	7	8	9	7	6	5	4	2	3	3	3	3	6.2	5.8	5.5	5.3	5.3	5.4	5.6	5.7	5.8	5.9	5.9	6.0	.72	.79	.79	.78	.79	.78	.73	.72	.68	.68	.68	.70
1878	4	3	4	4	3	2	2	1	0	0	0	0	5.8	5.5	5.2	5.3	5.3	5.4	5.3	5.4	5.2	5.5	5.7	5.9	.69	.73	.71	.72	.71	.72	.73	.75	.70	.69	.68	.65
1879	0	0	1	1	1	2	2	3	3	3	5	6	6.0	5.8	5.6	5.6	5.7	5.9	6.2	6.2	6.1	6.3	6.3	6.1	.63	.67	.69	.73	.76	.81	.84	.85	.80	.78	.74	.75
1880	5	6	8	9	10	14	19	21	21	21	20	17	6.5	6.5	6.4	6.4	6.6	6.9	7.2	7.5	7.6	7.6	7.7	7.9	.73	.78	.82	.85	.79	.80	.79	.80	.79	.85	.85	.83
1881	19	23	25	28	31	32	30	30	28	25	21	22	7.6	7.4	7.4	7.8	7.9	8.1	8.6	8.8	8.5	8.5	8.3	8.2	.77	.75	.69	.67	.67	.69	.72	.74	.74	.72	.73	.72
1882	23	31	34	37	36	34	28	25	25	22	21	20	8.0	8.0	8.2	8.1	7.8	7.7	7.9	7.6	7.9	8.2	8.3	8.3	.73	.75	.78	.81	.80	.79	.78	.75	.69	.75	.75	.76
1883	17	19	18	22	28	29	27	33	33	31	38	40	8.3	8.1	8.0	8.2	8.4	8.4	8.6	8.9	8.8	8.6	8.6	8.6	.81	.87	.81	.82	.84	.82	.79	.79	.80	.77	.77	.77
1884	42	48	49	43	42	39	34	31	29	28	27	29	8.3	8.3	8.4	8.8	8.6	8.4	8.3	8.3	7.8	7.9	8.1	7.8	.75	.74	.74	.73	.74	.76	.75	.73	.73	.75	.77	.76
1885	32	38	48	62	64	64	63	56	42	32	33	27	7.3	7.0	6.9	7.2	7.7	8.1	8.4	8.4	8.0	7.7	.....	.....	.76	.75	.73	.69	.70	.74	.76	.75	.71	.75	.75	.76
1886	30	31	37	35	37	29	27	20	15	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.77	.81	.76	.76	.77	.78	.79	.83	.84	.82	.....	.....

Year.	Mean temperature (degrees.)												Clouds (tenths.)												Precipitation (inches.)											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1872	.....	.....	56	56	57	58	58	58	57	55	54	54	.....	.....	4.9	4.8	4.9	4.9	5.0	4.8	5.0	5.0	5.0	4.9	.....	.....	25.61	26.87	28.22	26.86	26.22	22.45	22.21	22.35	24.01	24.69
1873	54	54	55	56	56	57	57	56	57	57	58	58	5.0	4.8	4.9	5.0	5.2	5.3	5.6	5.2	5.1	5.1	5.2	5.0	24.57	25.11	29.40	29.61	28.17	30.24	30.08	26.04	23.96	24.49	23.32	24.49
1874	58	57	57	57	57	57	59	58	58	58	57	56	5.2	5.3	5.1	5.0	4.7	4.7	4.7	4.7	4.9	5.0	5.1	5.0	26.01	32.89	29.39	30.92	31.93	30.10	26.28	28.02	26.92	24.75	24.71	24.39
1875	55	54	53	54	56	55	55	55	57	59	60	60	5.3	5.1	5.0	5.0	5.1	5.0	5.2	5.2	5.3	5.1	4.9	4.7	30.63	30.10	29.33	30.39	31.72	28.41	29.53	30.35	30.35	28.13	30.33	30.34
1876	60	60	59	57	56	57	57	56	56	54	54	55	4.9	4.7	4.9	5.0	5.2	5.1	5.2	5.0	5.1	4.9	4.8	4.7	36.99	34.95	36.10	32.52	32.61	28.89	29.10	25.93	24.54	23.55	20.21	17.36
1877	55	56	57	57	56	57	57	58	57	59	60	61	4.9	4.8	5.0	5.0	5.1	4.9	4.9	5.1	5.1	5.1	5.1	5.0	18.38	22.01	20.03	25.00	28.61	28.30	28.66	34.41	32.74	32.66	32.21	28.87
1878	63	64	61	60	00	58	57	58	59	57	57	56	4.6	4.5	4.7	4.8	4.6	4.8	4.7	4.5	4.2	4.4	4.3	4.4	24.88	24.11	24.21	25.89	26.88	28.95	26.49	27.04	26.00	27.50	25.68	25.65
1879	57	57	58	58	59	57	57	58	58	62	63	63	4.3	4.2	4.1	4.1	4.2	4.4	4.5	4.5	4.5	4.7	4.6	4.6	21.81	21.20	20.44	20.12	22.30	27.88	26.93	25.13	27.22	28.01	24.73	27.77
1880	62	62	62	59	58	58	57	56	54	54	53	53	4.8	4.8	4.6	4.6	4.7	4.6	4.8	5.0	5.3	5.4	5.5	5.5	31.42	30.57	29.16	30.33	30.70	29.35	31.25	32.18	34.67	32.86	32.68	32.97
1881	53	54	55	57	58	59	60	60	61	62	63	63	5.3	5.2	5.0	4.7	4.5	4.4	4.2	4.5	4.6	4.7	5.0	5.2	29.73	24.26	22.87	20.14	15.70	16.10	29.92	26.58	30.52	31.94	36.92	38.65
1882	63	63	61	59	57	56	55	57	60	60	60	60	5.0	5.0	5.3	5.1	5.3	5.4	5.3	5.2	5.2	5.1	5.0	5.2	35.33	32.38	36.21	31.47	29.54	29.83	28.41	25.52	27.13	24.20	23.85	28.76
1883	58	56	55	56	56	56	55	56	57	58	58	58	5.1	5.1	5.1	5.1	5.0	4.9	4.7	4.9	4.7	4.6	4.7	5.0	26.51	28.59	28.98	30.17	28.04	28.49	22.43	26.43	26.74	26.95	29.79	33.36
1884	59	58	56	57	57	56	58	59	59	59	56	56	4.9	5.2	5.3	5.5	5.4	5.1	4.9	4.7	4.3	4.5	4.5	4.4	31.04	28.58	28.98	29.50	28.32	25.63	27.64	27.56	25.64	30.91	31.03	30.02
1885	55	55	54	55	56	56	56	56	56	57	56	55	4.5	4.9	4.7	4.8	5.0	5.1	5.1	5.1	5.0	4.8	4.9	4.5	26.50	27.65	20.39	17.33	19.84	23.72	29.40	30.39	30.25	29.06	28.97	23.27
1886	56	55	55	56	56	56	57	57	57	57	.....	.....	4.7	4.8	4.8	4.8	4.8	4.6	4.6	4.4	4.3	4.4	.....	.....	23.74	25.58	24.78	25.63	23.93	23.73	25.38	24.71	23.83	24.54	.....	.....

A careful study of these curves will show many very interesting peculiarities. 1st, There is quite a marked minimum in the sun spot and magnetic declination curves between 1878 and 1879. 2d, The fluctuations in the latter correspond quite closely with those in the former, occurring, however, in many instances, from two to three months later. The enormous increase of sun spots in April, May, June, and July, 1885, has no such marked increase in the magnetic declination, and may be due to a large number of smaller spots having been counted in those months. 3d, There seems to be no close connection between the first two curves and either the range in air pressure or the mean temperature. 4th, There is a slight indication of a diminution of clouds and precipitation during the minimum of the sun spot period, but if there be a direct and important connection it is largely masked by other forces.

In presenting this method of investigation and these almost negative results, it is not intended to assume that the question of a connection or non-connection is by any means settled. It is simply an indication that, in common with nearly all other investigations in this line, this method of attacking the problem gives only negative results. The meteorological elements are affected by so many causes, which serve to mask the real effects from any cosmical or supra-terrestrial force, that we cannot hope to obtain a satisfactory solution until we are enabled to eliminate all other forces disturbing the one under consideration.

A single example may be given in a possible line of investigation. It is evident that taking a monthly mean of any element will frequently smooth out the very effect we wish to study. Now, taking the temperature, it would seem that a daily curve of this element, when compared with the daily sun spot curve, might show a connection which could not otherwise be obtained, but before such comparison could be made it would be essential to examine the influence of day and night, high and low pressure, invisible vapor in the atmosphere, clouds, precipitation, etc. It is evident that clouds would have contrary effects at night and in the daytime; in the first case they would tend to increase the temperature, and in the latter to diminish it.

The whole problem is much more complicated than appears at first sight. Incidentally, several very interesting points are brought out by the last three curves. 1st, With very few exceptions the winters of odd years are relatively cold, and those of even years are warm. 2d, In general the warm months have the least clouds and the cool months the most. 3d, As was to be expected, the curves of cloudiness and precipitation are very similar.

RESULTS OF ANEMOMETER OBSERVATIONS AT SEA.

[By Prof. FRANK WALDO.]

On a voyage from Baltimore, United States, to Bremerhaven, Germany, from September 28th to October 15th, 1882, on board the steamship "Ohio," three anemometers were exposed—No. 527 on cross piece of the mainmast, about eighty feet above the water; No. 519 just over the front edge, and on the top of the awning frame of the bridge, about thirty-five feet above the water; No. 521 on the wheel-house, near the stern, about twenty-seven feet above the water. The anemometers were of the Robinson form, with cups 4 inches (101.6 mm.) in diameter and arms 6.72 inches (170.7 mm.). These are the dimensions of the standard instrument of the Signal Service. The anemometer on the bridge blew off early in the series of observations and was rendered unserviceable. The few readings are of use in showing results of the exposures. The instruments had all been compared with the Signal Service standard, from which they did not differ more than four per cent. They were apparently new and in perfect condition at the time of mounting on ship-board, and, with the exception noted, remained in good condition as long as they were in use.

Analysis of the problem.

We observe: 1st, the true direction of the ship's course; 2d, the motion of the ship in an hour; 3d, the estimated true direction of approach of the wind; 4th, the anemometer reading for the hour; this is the resultant effect of the velocity of the wind and of the steamer. Required the *true velocity* of the wind for the hour.

To avoid onerous calculation I have devised a graphical method of solving the triangle between the ship and the wind, as follows:

Lay off on a line on a convenient scale 0, 1, 2, 3, &c., parts which correspond to the anemometer reading. Lay off another line, beginning at 0 and forming an angle of 1 point (11¼°) with this first line. On the second line mark off spaces 0, 1, 2, 3.....16, 17, 18, corresponding to knots (sea miles); these to be on the same actual scale as the divisions of the first lines. Then through the points 1, 2, 3.....16, 17, 18 draw lines parallel to the first line drawn. There will be 18 of these lines.

The same is done for angles 2 points, 3 points, &c. Take a pair of dividers and use, as follows: We have given the anemometer reading, the space passed over by the steamer, and the angle, expressed in points, between the true wind direction and the ship's course. Select the sheet on which the lines are at the correct angle. Adjust the dividers to the number of miles recorded for the hour by the anemometer, by means of the first line above. Then place one leg of the dividers at the intersection of the two original lines. Sweep with the other leg until the free end falls on the parallel line drawn through the divisions corresponding to the space passed over by the ship in the hour. Let the free leg rest on this intersection and, by readjusting the dividers, let the other leg touch the end of the same parallel line, where it intersects the second line, drawn at the division which marks the space passed over by the ship. Take up the dividers unchanged and find how many miles on the first line drawn correspond to the distance between the points of the dividers. This distance is the true wind movement for the hour.

Table I shows: 1st, the wind estimated on the Beaufort scale, 0–12; 2d, the number of hours for each anemometer corresponding to the wind velocity in the first column; 3d, the reduced mean anemometer indication for the same time (true wind velocity):

TABLE I.

Beaufort scale.	Hours.			Anemometer.		
	M. M.	W. H.	Bridge.	M. M.	W. H.	Bridge.
1.0	3	3	4	2.5	6.3	14 1
1.5	3	3	4	11.0	9.3	18.8
2.0	15	21	1	12.3	13.1	18.7
2.5	.....	.....	.....	.....	.....	.....
3.0	7	12	1	13.4	10.0	23.9
3.5	.....	.....	1	.....	.....	19.5
4.0	19	24	.....	14.1	16.4	.....
4.5	1	1	1	23.1	22.3	19.1
5.0	21	18	.....	19.9	19.4	.....
5.5	37	36	18	27.5	30.5	29.2
6.0	37	34	4	27.2	32.6	26.8
6.5	19	11	....	24.1	37.7	.....
7.0	12	8	4	28.4	39.3	35.9
7.5	5	3	2	32.4	40.5	30.6
8.0	5	3	1	46.2	43.7	43.4
8.5	5	4	2	47.2	44.7	33.9
9.0	5	2	2	51.8	42.8	46.8

From Table I, by a graphical construction, we obtain, approximately, the wind velocity corresponding to each figure of the Beaufort scale at each exposure, as in Table II:

TABLE II.

1	2	3	4	5	6	7	8	9	Beaufort scale.
6	12	15	17	20	27	30	42	54	Mainmast (80 feet).
7	10	13	17	23	32	40	43	47	Wheel-house (27 feet).
12	18	22	25	28	30	32	37	43	Bridge (35 feet).

Table III gives a comparison between these results and those of Prof. R. H. Scott, in England (Quarterly Journal Meteorological Society, Vol. II, p. 109). Column five is formed from Table II, by taking the mean of the three anemometers, giving a weight of 1 to the bridge and weights of 3 to the other two to allow for the number of observations:

TABLE III.

Beaufort scale.	R. H. Scott.	F. Waldo.		Mean of three anemometers.
		W. H.	M. M.	
1	8	7	6	7
2	13	10	12	12
3	18	13	15	15
4	23	17	17	18
5	28	23	20	22
6	34	32	27	30
7	40	40	30	35
8	48	43	42	42
9	56	47	54	50

Comparing the results at twenty-seven and eighty feet, we find that up to 17 miles per hour there seems little difference, but from 17 to 42 the lower instrument gave the higher readings, and above 42 the upper gave the higher reading. No record of hoisting the mainsail was kept, and this sail, though small, might have deflected the wind, causing smaller readings on the mainmast.

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